

[Request Information](#)

[Permalink](#)

## Octopus-Inspired Camouflage and Signaling Systems

Tech ID: 33740 / UC Case 2020-682-0

### BRIEF DESCRIPTION

A groundbreaking technology that mimics the dynamic color-changing functionality of the blue-ringed octopus for applications in camouflage, signaling, and beyond.

### FULL DESCRIPTION

Researchers at UCI have developed adaptive platforms based on a nonacene derivative, showcasing exceptional stability and versatility. These platforms can modulate their appearance across visible and near-infrared spectrums, inspired by the natural camouflage capabilities of the blue-ringed octopus. The nonacene derivative used is notable for its easy synthesis, solubility, and processing into films, enabling large-area device fabrication that is both rapid and self-repairing. This innovation promises to overcome the limitations of current systems by offering dual-mode actuation, rapid response times, and multifunctional optical capabilities.

### SUGGESTED USES

- » Advanced camouflage and stealth technologies.
- » High-resolution organic optoelectronic displays.
- » Biomedical imaging and sensors.
- » Energy harvesting systems and photovoltaics.
- » Soft robotics and actuators with self-repairing capabilities.

### ADVANTAGES

- » Unprecedented stability and tunability across a broad wavelength range.
- » Simple fabrication over large areas with self-repair capabilities.
- » Rapid response times with minimal performance degradation over time.
- » Compatibility with mechanical and electromechanical actuation strategies.
- » Multifunctional, enabling simultaneous modulation of coloration, fluorescence, and transmittance

### PATENT STATUS

Patent Pending

### CONTACT

Richard Y. Tun  
tunr@uci.edu  
tel: 949-824-3586.



### OTHER INFORMATION

#### CATEGORIZED AS

- » **Optics and Photonics**
  - » All Optics and Photonics
- » **Materials & Chemicals**
  - » Other
  - » Textiles
- » **Security and Defense**
  - » Other
- » **Sensors & Instrumentation**
  - » Biosensors
  - » Environmental Sensors

#### RELATED CASES

2020-682-0

**UCI** Beall  
Applied Innovation

5270 California Avenue / Irvine, CA  
92697-7700 / Tel: 949.824.2683



© 2024, The Regents of the University of  
California  
[Terms of use](#)  
[Privacy Notice](#)